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REVISION CHECKLIST

HASP SECTION	PM INITIALS	HSM INITIALS	SSO INITIALS	DATE	COMMENTS

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1.0 PURPOSE

The purpose of this health and safety plan (HASP) is to assign responsibilities, establish personnel protection standards, specify safe operating procedures, and provide for contingencies that may arise during field activities at the USS Lead Facility and the soils handling facility in East Chicago, Indiana, and for soil transportation activities.

This HASP has been developed in accordance with the Chemours Corporate Remediation Group and Parsons safety and health standard operating procedures, and is in compliance with requirements set forth in 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response.

The site supervisor and site safety officer (SSO) have shared responsibility for implementing and enforcing this HASP. The SSO will evaluate this HASP for continuing adequacy throughout the course of field activities to incorporate changes necessitated as a result of changes in site activities. All proposed revisions to this HASP will be reviewed by the Health and Safety Manager prior to implementation by the project team and annotated on the revision checklist provided at the beginning of this document.

All participants involved in the project will be briefed on and afforded the opportunity to question this HASP. In addition, all Parsons staff, Subcontractors to Parsons and Subcontractors to Subcontractors of Parsons will sign the HASP Compliance Form provided in Appendix A (see Appendix A for field-related forms) or their own company HASP.

The site supervisor or SSO will promptly notify supervisors of subcontract companies of any revisions, modifications, and or addendums to the HASP. These supervisors will in turn discuss all changes with their workers at their daily safety meetings.

1.1 The Project Safety, Health, and Environmental Plan (PSHEP)

Parsons goal is zero incidents using control measures designed to minimize or eliminate hazards to personnel, processes, equipment, the general public and the environment. This PSHEP outlines safety, health, and environment (SH&E) requirements and guidelines developed by Parsons for client-specific work. When implemented, these requirements will help protect site personnel, visitors, the public, and the environment from incidents caused due to SH&E hazards. Parsons employees should never perform a task that may endanger their own safety and health, the safety and health of coworkers or the public, or damage the environment.

PARSONS

Corporate Safety, Health & Environment Policy Statement

As an industry-leading engineering, construction, and technical services firm, Parsons is firmly committed to maintaining a safe, healthy, and environmentally compliant workplace at all its offices and project facilities, guided by the following tenets:

- Safety, Health and Environment (SH&E) is a core value.
- Executive management will lead the SH&E process.
- SH&E will be a responsibility shared by all.
- SH&E performance will be a key business performance indicator.
- SH&E performance will be communicated openly.
- Employees will be given the knowledge and skills necessary to perform their jobs in a high-performance SH&E manner.
- We will extend our SH&E efforts beyond the workplace to include travel, homes, and communities.
- We will continually strive to improve our SH&E processes.

To meet our SH&E objectives, all employees are expected to be actively engaged with regard to SH&E issues. This requires the combined efforts of a concerned management, responsible and knowledgeable supervision, and conscientious, well-trained employees.

Executive Management shall lead and monitor and improve the performance of the organization's Safety, Health and Environmental Management System, at regular intervals, to ensure its continuing suitability, adequacy, and effectiveness.

Parsons will meet or exceed the applicable SH&E legal and other requirements and will continuously monitor and improve operations, procedures, technologies, and programs that are conducive to maintaining a safe, healthy, and environmentally compliant workplace.



Charles L. Harrington
Chairman and Chief Executive Officer
January 2012

This plan should be updated as conditions change or situations change, usually by addenda to the PSHEP. All Parsons and Parsons' subcontractor personnel must understand and implement the PSHEP and any addenda. Parsons documents this process by having employees sign an acknowledgement form stating that they understand the PSHEP and its requirements.

1.2 Subcontractor Safety, Health, and Environmental Plans (SSHEPs)

Parsons' subcontractors must establish their own safety program for their work and employees. Contract specifications require all subcontractors to accept the Parsons' PSHEP and prepare their own subcontractor safety, health, and environment plan (SSHEP) for work activities the subcontractor has responsibility for performing. The subcontractor will present the SSHEP to the Parsons' Project Manager at least 10 days before site mobilization. At a minimum, subcontractor plans must meet the requirements of this PSHEP and provide SH&E equipment and safeguards suitable for the hazards involved. This PSHEP may not cover all potential hazards on every project, and subcontractors must ensure that appropriate SH&E information is available for all of the subcontractor's project tasks.

All PSHEP requirements for Parsons' personnel (e.g., training, substance abuse screening, incident reporting, etc.) also apply to subcontractor personnel, and do not need to be repeated in the SSHEP. Since the SSHEP is part of the PSHEP, subcontractor personnel will be required to receive an Orientation that covers information from both documents, and sign off accepting the PSHEP.

1.3 Site Visitor Safety

Visitors and temporary inspectors to the site shall sign the visitors log and be given a site-specific health, safety, and environmental protection briefing. Visitors may be required to have an escort at all times.

1.4 Subcontractor Prequalification Review

Should there be subcontractors directly hired by Parsons for this project, such subcontractors must be vetted through the Parsons prequalification review. Approved subcontractors must be listed in the table below, which includes specific work activities and the data on which the prequalification review was finalized and the subcontractor approved for work.

Hired Subcontractors

SUBCONTRACTOR	WORK ACTIVITIES	DATE OF EVALUATION

SUBCONTRACTOR	WORK ACTIVITIES	DATE OF EVALUATION

1.5 Competent Person Submission Review

Copies of signed [Competent Person forms](#) for subcontractor personnel must be submitted prior to starting work and retained in the project files.

1.6 ESHARP Compliance

To ensure compliance with Parsons Environment, Safety, Health and Risk Management Program (ESHARP), the requirements identified in this HASP are to be used in conjunction with the Parsons Chemours Corporate Remediation Group (CRG) Health and Safety Program Plan (CHASPP). Parsons and its subcontractors must comply with the recordkeeping requirements of the regional, municipal, local, and/or OSHA regulations, Owner, Parsons Corporation, and this PSHEP, including:

- OSHA 300 and/or applicable regional, municipal, and local regulation logs
- Medical treatment and follow-up
- Cranes
- Heavy equipment inspection logs
- Fall protection
- Training
- Inspections
- Audits
- Others, as required

Parsons Talent Management and the Division or Program SH&E Manager are the official recordkeepers for files relating to Parsons employees. Each subcontractor maintains its own files.

For this project, safety bulletin boards used for displaying regional, municipal, provincial, local and/or OSHA posters in conspicuous places will be located at the Parsons site office in a readily accessible and visible area.

1.7 Project Safety, Health, and Environmental Plan Application

This PSHEP and its referenced documents apply to all locations, facilities, operations, and projects associated with work performed by Parsons and its subcontractors. The project work site includes the project area (as defined by the contract documents), the soils handling area(s), project onsite offices and onsite trailers.

2.0 PROJECT DESCRIPTION

2.1 General

Property Name: USS Lead Superfund Site

Property Address: East Chicago, Lake County, Indiana

Property Description: The project related to the USS Lead Residential Soil Contamination Site (Site) is focused in Operable Unit 1 (OU1), which is a 322-acre residential area bounded by East Chicago Avenue on the north, East 151st Street on the south, the Indiana Harbor Canal on the west and Parrish Avenue on the east. OU1 has been divided into three zones.

Zone 2 is generally bordered: (1) on the north by Chicago Avenue; (2) on the east, by the eastern edge of the railroad right of way (Elgin Joliet and Eastern Railroad) that runs principally north and south; (3) on the south by East 151st Street; and (4) on the west by: (i) the Indiana Harbor Canal between Chicago Avenue and the northern boundary of the Carrie Gosch Elementary School; (ii) the eastern-most edge of a north/south utility right of way that runs parallel to McCook Avenue until East 149th Place, and (iii) McCook Avenue between East 149th Place and 151st Street.

Zone 3 is generally bordered: (1) on the north by Chicago Avenue; (2) on the east by Parrish Avenue; (3) on the south by the northern edge of the railroad right of way (Elgin Joliet and Eastern Railroad) located generally to the south of East 149th Place; and (4) on the west by the eastern edge of the railroad right of way (Elgin Joliet and Eastern Railroad) that runs principally north and south. The triangular plot of land bounded by several railroad spurs in the southwestern portion of Zone 3.

Figure 1
Site Location Map

USS Lead Superfund Site
East Chicago, Indiana

2.2 Nature of Activity

☐ PRFI ☐ RFI ☐ Remedial Action ☒ Other: Sampling oversight and Split Sampling for the Remedial Design

Project Name: USS Lead Remediation

Project Number: Parsons: 451037

Project Manager: Randy Palachek 512-663-9590

Site Safety Officer: Keith Thompson 302-810-5016

Program Safety Mng: Greg Ertel 585-353-2574

Project Organization

Parsons personnel on site: 6 Maximum number: 12

Subcontractor personnel on site: 10 Maximum number: 24

2.3 Responsibilities

2.3.1 Project Manager

Randy Palachek

Responsibilities include overall coordination of site activities. The Parson Project Manager (PM) has overall accountability and responsibility for the safety of operations and the health and safety of all personnel. The project manager is responsible for ensuring that the project is audited to verify compliance with the project health and safety program. In addition, the PM must ensure that the Parsons SHARP (safety, health, and risk management) program is implemented throughout the life of the project.

2.3.2 Health and Safety Manager

Greg Ertel, CIH, CSP

The health and safety manager is a resource for development of the site-specific HASP and will be consulted on all related health and safety issues that arise in the field, including any changes in the scope of work. The health and safety manager will make all final decisions regarding questions on the HASP.

2.3.3 Site Supervisor

Keith Thompson

The site supervisor is responsible for field-related activities under the direction of the project manager and for maintaining field operations in accordance with project requirements. He is responsible for enforcing daily implementation of the HASP and resolving health and safety issues with the SSO. He also will assist in conducting site briefings and document having done so (see Section 8.4) on the Daily Safety Briefing Log (refer to Appendix A) or in the field logbook. He will substitute for the SSO as required by project activities.

2.3.4 Site Safety Officer

Keith Thompson

Responsibilities of the SSO include implementation of this HASP. The SSO is responsible for implementing and enforcing the HASP, overseeing the safety of operations, and coordinating safety with subcontractors. In particular, the SSO will:

- Ensure that personnel are aware of the provisions of this HASP and are instructed in work practices, safety, waste management, and emergency procedures.
- Establish and ensure maintenance of site work zones.
- Evaluate site conditions (i.e., weather, chemical, physical) and recommend any modifications to existing levels of protection.
- Ensure that safety briefings are conducted with assistance from the site supervisor.
- Initiate emergency response procedures with immediate communication to the project manager.
- Exercise stop-work authority in the event of imminent danger to project personnel.
- Manage any stop-work event and will perform timely notifications of the event and will issue modifications to procedures to all site workers through subcontractor supervisors, as appropriate.
- Resolve any noncompliance issues with the site supervisor.
- Conduct regular inspections to determine effectiveness of the HASP.
- Maintain the SSO logbook.
- Maintain copies of documents (e.g., training, medical).

2.3.5 Project Personnel

Project personnel involved in field activities are responsible for:

- Taking all reasonable precautions to prevent injury to themselves and to fellow employees.
- Conducting only those tasks that they believe they can do safely.
- Exercising stop-work authority in the event of imminent danger to project personnel.
- Reporting all occurrences and/or unsafe conditions to the SSO, project manager or their supervisor, who then notifies the SSO.

3.0 SCOPE OF WORK

The 2018 Remedial Actions for the USS Lead Superfund Site project consists of three major work elements. The three activities to be performed during 2018 include the following:

Task A. External Tasks (Outdoor) Coordination, Site Preparation, Excavation, Soil and Air Sampling/Monitoring, Surveying, Backfill and Restoration

Task B. Offsite Soil Stockpiling Tasks, Soil and Air Sampling/Monitoring, Decontamination, Equipment Fueling and Maintenance

Task C. Internal Tasks (Indoors at Residences) Coordination, Sampling/Monitoring and Cleaning

Specific details relating to Task A (Exterior/Outdoor tasks) are provided in Sections 4 through 11. Task B (Offsite Soil Stockpiling tasks) details are discussed in Sections 12 through 19. And Sections 20 through 27 cover the specifics of Task C (Internal/Indoor tasks).

3.1 Task A: Exterior Task (Outdoor), Work Elements

The Exterior (Outdoor) task work elements include the following:

- 1) Coordinating with Property Owners/Tenants
- 2) Utility Locating
- 3) Mobilization and Site Preparation
 - a) Equipment delivery and facilities construction
 - b) Preconstruction property visit
 - c) Marking excavation limits
 - d) Preconstruction surveys
 - e) Movement of and protection of owner/tenant property
 - f) SWPPP implementation
 - g) Clearing, grubbing and tree, shrub, and fence removal
- 4) Property Remediation
 - a) Air sampling
 - b) Dust and noise management
 - c) Soil excavation and segregation
 - d) Soil sampling and analysis
 - e) Waste characterization
 - f) Backfilling, compaction and topsoil installation
- 5) Surveying
 - a) Pre-construction
 - b) Post-excavation
 - c) Post-backfill
 - d) Post-topsoil
- 6) Waste Management
 - a) Materials handling plans

- b) Loading
- c) Transportation
- d) Temporary stockpiling
- e) Waste characterization
- f) Disposal
- 7) Site Restoration
 - a) Replacing owner/tenant property
 - b) Replacing fence/gates
 - c) Restoring possible damaged property
 - d) Planting replacement trees, shrubs and perennials at residential properties
 - e) Sod and/or seed installation and watering at residential properties
- 8) Demobilization

3.2 Task B: Offsite Soil Stockpile Task (at Chemours Property), Work Elements

The Offsite Soil Stockpile Task work elements include the following:

- 1) Coordinating with Subcontractors
- 2) Site Preparation
 - a) Installing and Maintaining Erosion Control Elements
 - b) Setting Up Specific Area(s) for Decontamination, Equipment/Vehicle Maintenance and Equipment/Vehicle Fueling at the Offsite Soil Stockpile Site
 - c) Installing and Maintaining Traffic Control and Safety Elements
 - d) Air/Dust Sampling and Monitoring
- 3) Soil Handling
 - a) Housekeeping Tasks
 - b) Stockpiling Tasks and Stockpile Maintenance
 - c) Soil Sampling for Waste Characterization
- 4) Waste Management
 - a) Soil Loading, Manifesting, and Disposal
 - b) Decontamination and Decontamination Waste Handling and Disposal

3.3 Task C: Internal Task (Indoors at Residences), Work Elements

The Internal (Indoor) task work elements include the following:

- 1) Coordinating with Property Owners/Tenants
- 2) Mobilization and Site Preparation
 - a) Preconstruction property visit and survey
 - b) Protection of owner/tenant property
- 3) Property Remediation
 - a) Housekeeping Tasks

- b) Personal Air Monitoring
- c) Pre-Cleaning Vacuum Dust Sampling
- d) Pre-Cleaning Lead-Based Paint Screening
- e) Indoor Cleaning
- f) Post-Cleaning Lead and Arsenic Efficacy Sampling and Analysis
- g) Possible Interior Re-Cleaning, If Necessary
- 4) Waste Management
 - a) Materials Handling Plan
 - b) Disposal
- 5) Interior Restoration
 - a) Replacing owner/tenant property

4.0 EXTERIOR WORK - HAZARD EVALUATION

Sections 5 through 11.

4.1 Activity Hazard Analysis

Activity Hazard Analyses for the Exterior Work tasks are provided in Appendix B. All site personnel should have reviewed this document and become familiar with any potential risks and appropriate controls.

Site SH&E hazards and risks are controlled using one or more of the control measures listed below (in order of precedence):

- **Engineer/design to eliminate or minimize hazards.** A major component of the design phase is to select appropriate features to eliminate a hazard/risk and render it fail-safe or provide redundancy using backup components.
- **Guard the hazard.** Hazards that cannot be eliminated by design must be reduced to an acceptable risk level by guards or isolation devices that render them inactive.
- **Provide warnings.** Hazards or risks that cannot be totally eliminated by design or guarding are controlled through using a warning or alarm device.
- **Provide special procedures or training.** When design, guarding, or warnings cannot eliminate hazards/risks, procedures, training, and audits must be developed to ensure safe and environmentally compliant completion of work. Training cannot be a substitute for hazard elimination when life-threatening hazards are present.
- **Personal protective equipment (PPE)** is the last control measure to protect workers from injury.

The Parsons TAG program will also be employed. The purpose of the TAG program is to improve and promote hazard recognition and encourage everyone to take personal responsibility for their safety and the safety of others. TAG does not require completing any forms, but it does require personnel to:

- **THINK** about the hazards associated with their task
- **ANALYZE** and find safe solutions
- **GO** ahead and complete their tasks safely

All significant changes to the scope of work or equipment that are not replacements in kind must be properly documented in accordance with the approved Management of Change program. This includes a deviation from an established process or technical standard, modification of existing technology, or demonstration of remediation in different equipment. The change approval will include documentation of any operating instructions required for the specific change and will ensure that the change has no adverse effects on safety, remedy quality, and the environment.

4.2 Chemical Hazards

4.2.1 Constituents of Concern (COCs) and Possible Unknown Substances

The COCs in soil include the metals arsenic and lead. Information on the two COCs is provided below. Data from 2017 work tasks and prior studies at Zones 2 and 3 of the USS

Lead Site show no reason to believe that employees performing the exterior or interior work tasks may be exposed to either COC above the PEL or Action Level. However; proper training, sampling, monitoring and protection measures are detailed in this HASP and Appendices.

Chemical Hazards	Arsenic	Lead
OSHA PEL (mg/m3)	0.01	0.05
IDLH (mg/m3)	5	100
Action Level (mg/m3)	0.005	0.03

The total particulate dust action level for air at outdoor activity areas will be 100 micrograms per cubic meter (ug/m3) above background for a 15 minute average and greater than 150 micrograms per cubic meter (ug/m3) in the downwind area.

In addition to the primary COCs above, additional possible chemicals or substances that could be encountered might include asbestos, mercury, waste products and other unknown substances.

Field workers and supervisors shall remain vigilant to notice an unknown substance/container; make sure workers, citizens, the site conditions and the environment are safe; and immediately communicate the issue. If an unknown substance is encountered, the field team is to instigate a stop-work event, egress from the area safely and immediately, then call 911 (if appropriate) and the SSO as soon as possible to begin a safety assessment of the area and substance involving the proper safety management personnel.

4.2.2 Potential Exposure Routes and Risk Mitigation Measures for COCs

The Agency for Toxic Substances and Disease Registry (ATSDR) has determined that exposure to lead presents human health risks. Lead exposure via inhalation and/or ingestion can have detrimental effects on almost every organ and system in the human body. Exposure may occur from direct ingestion of soil in yards, soil tracked indoors (house dust), and inhalation of fugitive dust. Lead can cause a variety of health problems to people who are exposed to it. Potential human receptors include residents, with a particular concern for children six years of age and under, and pregnant or nursing women. Children are at greatest risk from the toxic effects of lead. Initially, lead travels in the blood to the soft tissues (heart, liver, kidney, brain, etc.). Then, it gradually redistributes to the bones and teeth where it tends to remain. Children exposed to high levels of lead have exhibited nerve damage, liver damage, colic, anemia, brain damage, and death. The most serious effects associated with markedly elevated blood lead levels include neurotoxic effects such as irreversible brain damage.

ATSDR has determined that exposure to arsenic presents human health risks. Ingesting very high levels of arsenic can result in death. Exposure to lower levels can cause nausea and vomiting, decreased production of red and white blood cells, abnormal heart rhythm, damage to blood vessels, and a sensation of "pins and needles" in hands and feet. Ingesting or breathing low levels of inorganic arsenic for a long time can cause a darkening

of the skin and the appearance of small “corns” or “warts” on the palms, soles, and torso. Skin contact with inorganic arsenic may cause redness and swelling. Several studies have shown that ingestion of inorganic arsenic can increase the risk of skin cancer and cancer in the liver, bladder, and lungs. Inhalation of inorganic arsenic can cause increased risk of lung cancer. The Department of Health and Human Services (DHHS) and the EPA have determined that inorganic arsenic is a known human carcinogen (ATSDR, Chemical Abstract Services [CAS] # 7440-38-2, August 2007).

Inhalation, ingestion and skin and eye contact with impacted soil are the possible exposure route for the activities specified in this health and safety plan.

These exposure routes will be minimized through performing worker training in proper dust control, sampling and monitoring, performance of confirmation soil sampling, proper handling of impacted soil, decontamination methods, housekeeping practices and hygiene practices for eating and drinking.

When engineering or administrative controls are not adequate to minimize the hazards, Personal protective equipment (PPE) will be used. Additional information regarding PPE is provided in Section 6.0.

XRF

A hand-held X-ray Fluorescence (XRF) analyzer will be used to screen soil for levels of lead and arsenic concentrations using EPA Method 6200. This hand-held analyzer contains an X-ray tube as part of the operating/analyzing mechanism.

In the state of Indiana, the use of an analytical x-ray machine (XRF) is regulated under Indiana Code, Rule 8- 410 IAC 5-8.

The term radiation is used with all forms of energy—light, X-rays, radar, microwaves, and more. For the purpose of this manual, however, radiation refers to invisible waves or particles of energy from radioactive sources or X-ray tubes. High levels of radiation may pose a danger to living tissue because it has the potential to damage and/or alter the chemical structure of cells. This could result in various levels of illness (mild to severe). The user of an XRF analyzer must understand the nature of radiation and how to safely use XRF analyzers.

The primary beam has ionizing radiation from an X-ray tube that is directed through an aperture in the radiation source housing for use in collecting X-ray fluorescence measurements. The state does not require the use of personnel monitoring devices when using an XRF as long as during normal operation and maintenance the primary beam is not exposed.

In addition, XRF users on this project shall receive use-specific basic radiological awareness training and training on the operation of the XRF (see below). The curriculum provided by this training will meet the intent of Indiana Division of Radiation Control and the requirements identified on the radiological license. This will include the following:

- 1) Identification of radiation hazards associated with the use of the equipment;
- 2) Significance of the various radiation warning, safety devices, and interlocks incorporated into the equipment, or the reasons they have not been installed on certain pieces of equipment and the extra precautions required in such cases;
- 3) Proper operating procedures for the equipment;
- 4) Recognition of symptoms of an acute localized exposure; and

- 5) Proper procedures for reporting an actual or suspected exposure.

The Parsons field staff members that will be operating XRF devices have already obtained their valid Indiana Division of Radiation Control radiological license.

The following information shall be researched and reviewed by appropriate safety personnel and any person operating an XRF:

- 1) Review the radiation safety regulations and the device user manual.
- 2) Verify no federal, state or local permitting is required of use and transport.
- 3) When utilizing the XRF unit, the following standard operating procedures shall be implemented:
 - a) Keep regulatory paperwork/general user agreement with the unit.
 - b) Always use the safety wrist strap when using the unit.
 - c) Lock the analyzer up in a secure location when not in use.
 - d) When the XRF is in the case, ensure that the metal shield is in front of the point source/sample field.
 - e) Never point the X-ray source at yourself or anyone else and never hold the unit over your hands.
 - f) Verify instrument accuracy daily using the reference standard and understand the unit accuracy calibration values
 - g) Perform calibration/accuracy checks each time the unit is turned on when being used for the detection of lead sources.
 - h) Monitor values during each accuracy/calibration check and notify an authorized manufacturer service vendor when values are more than +/- 20 units of the deviation resolution values.

4.2.3 Safety Data Sheets

A Safety Data Sheet (SDS) (formerly Material Safety Data Sheet (MSDSs)) must be provided to the SSO for any materials, chemicals or products that will be brought on site to accomplish the work. Prior to use, the SSO must review the SDS and approve that product for use. In addition, plant-specific approval requirements may apply. Materials or products may include decontamination solutions, fuel for equipment operation, preservative for sample containers, etc. All labeling and storage of hazardous materials must be in accordance with regulatory requirements.

Any SDS are included in the SDS binder maintained by the SSO.

4.3 Physical Hazards

Procedures to be used to monitor/reduce these hazards will include the following and the procedures detailed in the AHAs in Appendix B:

- **Slip/trip/fall:** Good housekeeping practices should be employed to prevent slip/trip/fall hazards. Focus on task, do not look at documents or a phone when walking to prevent slip/trip/fall hazards caused by terrain. Wear steel toed safety boots with ample tread.

- **Lifting/Moving Loads:** Discuss lifts and moves with team-members before lifting, do not carry over 50 pounds for one person. Avoid awkward loads and postures while lifting. Utilize equipment to facilitate safe lifts or moving of loads.
- **Heat/cold:** Ample breaks will be taken during hot or cold ambient conditions and wear clothes and gear appropriate for the weather (see Appendix D).
- **Electrocution/explosion/fire:** One call will be utilized and excavation and backfill will be performed by hand or least impacting methods to minimize energized above-ground and subsurface utility risks.
- **Vehicle traffic and Working in Populated Areas:** Use barricades, traffic cones or other appropriate measures to control vehicle traffic throughout the work area. See the protocol for Signs, Barricades and Traffic Control in Appendix G. Sampling will be conducted in residence yards, thus location of cars and traffic should be observed. Personnel will wear high visibility vests and keep a safe distance from vehicles pedestrians. All site personnel will obey local traffic signs and speed limits and use extra caution around children and school buses. Personnel will be working in close proximity to residential houses and have the potential for contact and interaction with the public.
- **Lone Worker and Security:** Remain aware of your surroundings at all times, work in a buddy system and have a functioning cell phone. If threatened by persons or bearing witness to a crime, immediately get to a safe area and call 911.
- **Solar Radiation:** Wear sun-block and/or cotton clothing as needed to protect skin from sun.
- **Proper Lighting for Work Tasks:** Evaluate work areas and tasks for lighting needs. Utilize appropriate auxiliary lighting including area work lights (110v or battery powered), flashlights, battery powered lanterns and/or headlamps.
- **Noise:** Plan loud work for approved time periods, keep unnecessary personnel away from loud work areas and site workers wear approved noise PPE.

4.4 Biological Hazards

Procedures to be used to monitor/reduce these hazards will include the following and the procedures detailed in the AHAs in Appendix B

- **Feral, dangerous or loose animals:** As appropriate, safely get to a safe area inside a vehicle or structure. Call the site contact and possibly the city animal control department. Site contact will notify other workers in the area of the hazard. If a seemingly unsafe animal is in/on a private residence at or near site work, ask the owner/tenant to properly secure the animal during work to prevent injury to workers. For subsequent days, verify with the owner/tenant that the animal is secured before beginning work.
- **Drug paraphernalia, firearms, weapons, large gatherings of people, narcotics, garbage or sharps:** Evaluate the work area upon initial walk-up or entry for these and other similar hazards. Leave the area immediately and contact the SSO and/or 911 (if appropriate). When working in any area/residence, routinely scan the area to keep aware of your surroundings and to see or sense if any of these elements may become an issue. If the safety scenario appears it may

be getting worse, leave the area immediately and call the SSO and/or 911 (if appropriate).

- **Mosquitoes:** Mosquitoes may be present and may be carriers of malaria, yellow fever, encephalitis, West Nile Fever and other diseases. Wear mosquito repellent as necessary, especially to areas not protected by clothing. Drain pooled or standing water if possible. Be aware of the mosquito-borne illnesses in your area.
- **Stinging insects:** If stung by a bee, carefully removed the stinger by gently scraping with a finger nail (do not squeeze). Wash the area with soapy water and apply a cold (ice) compress to decrease absorption and spreading of the venom. If excessive swelling or redness appears, seek immediate medical attention. **(Note: Allergic reactions to bee stings can be life threatening; therefore, identify susceptible persons prior to project start-up. See form in Appendix A.)**
- **Ticks:** Avoid brush and tree habitats where ticks live, cover exposed skin and pathways for tick exposure, use repellent as necessary and perform tick inspections as necessary. Report tick exposure and seek proper medical care.

5.0 EXTERIOR WORK - WORKER PROTECTION

The levels of personal protection are selected by evaluating the performance characteristics of the clothing against the requirements and limitations of the site- and task specific conditions.

5.1 Level of Protection

The specific PPE listed for each level of protection was selected based on potential respiratory and dermal hazards. The levels of protection to be used during project-related activities are as follows:

Level D

- Hard hat as needed (in close proximity to heavy equipment or construction area, overhead hazards present)
- Safety glasses with side shield protection
- Steel-toed boots
- High visibility vest as needed
- Appropriate task specific-gloves (leather work gloves and/or nitrile gloves for sample collection)
- Hearing protection as needed
- Standard work clothes (long pants and long sleeve shirt)

Modified Level D - Laborers in Excavations

- Level D (above)
- Tyvek Pants and Boot Covers

5.2 Task-Specific Protection Level for Exterior (Outdoor – Excavation Tasks)

Protection discussed in the paragraphs that follow will be used to initiate each task. An upgrade or downgrade to the specified level of protection will be based on airborne particulate concentrations and skin contact. The Health and Safety Manager must approve any changes or adjustments to these levels of protection. At a minimum, notification of changes will be made to all appropriate site personnel through discussion with supervisors at daily safety briefings.

Soil stockpiles will only be used at the offsite Chemours Soil Stockpile site. No soil (excavated, backfill or topsoil) stockpiling will occur at residential lots.

Task: Exterior Tasks, Residential Yards, Utilities
Clearances, Excavation, Backfill, Compaction,
Revegetation

Location: USS Lead Site

Engineering/Administrative Controls: Yes ☒ No ☐

If yes, list: Perform One-Call, City of East Chicago (Indiana) Public Work Department and subcontracted private company utility inspection and marking events before any work begins at each residence. Discuss relevant utilities with all site workers each day. Inspect all equipment prior to use. Use the right equipment for the job. Have fire extinguishers and spill control kits readily available. Plan work to minimize dust generation and amount of open/disturbed soil. Implement dust control water use to vehicle pathways and open soil. No soil stockpiling will be performed at residences, only at the offsite soil stockpile area (see Section 3 and Sections 12 through 19 of this HASP). Ambient outdoor air sampling and monitoring for particulates, lead and arsenic will be implemented.

	PPE Level	Range (ppm or mg/m ³)/Condition
Initial Level	Level D (high visibility vest, hard hat as appropriate, work and/or nitrile gloves, steel toed safety boots)	Use wet methods as needed during excavation or soil handling; Stop work if visible dust is generated
Downgrade Level	N/A	N/A

Task: Exterior Tasks, Laborers in Excavations at
Residential Yards: Excavation, Backfill,
Compaction

Location: USS Lead Site

Engineering/Administrative Controls: Yes ☒ No ☐

If yes, list: Excavations will be 3' deep or less. Shoring or slope protection should only be required if special conditions warrant. Hazard tape, construction fencing or similar shall be installed to protect workers and the public and prevent unauthorized entry. Plan work to minimize dust generation and amount of open/disturbed soil. Implement dust control water use to vehicle pathways and open soil. Ambient outdoor air sampling and monitoring for particulates, lead and arsenic will be implemented.

	PPE Level	Range (ppm or mg/m ³)/Condition
Initial Level	Modified Level D (high visibility vest, hard hat as appropriate, work and/or nitrile gloves, steel toed safety boots, Tyvek pants, Tyvek boot covers and dust mask as necessary)	Use wet methods as needed during excavation or soil handling; Stop work if visible dust is generated
Downgrade Level	N/A	N/A

5.2.1 Dust

The largest potential source of dust and emissions during the work will be the excavation and handling of material during soil remedial action. Dry decontamination techniques will be used on transport trucks with broom/dust broom sweeping and collection or HEPA vacuuming as needed. Excavation equipment will be stored in a manner that does not generate fugitive dust immediately after completion of work. To decontaminate excavation equipment, the equipment may be cleaned by wet wash or a HEPA vacuum equipped with a filter rated by the manufacturer to achieve 99.97% capture efficiency for 0.3 micron particles immediately after completion of the work and prior to exiting the property.

Dust control measures will be implemented during remediation activities. The planned excavation areas are expected to require simple control measures to mitigate fugitive dust. Typical dust control measures may include; water spray, spray of water amended with environmentally safe additives (such as Simple Green, Envirotech Vapor Suppression, or equivalent), coverage of soil with plastic sheeting or coverage of soil with clean soil. Further details are provided in the next section.

Dust Suppression Techniques

A rule of "no visible dust" will be applied to all aspects of the work that involve impacted soils and fill placement. This will be accomplished by implementing the following procedures to control the possible generation and migration of dust during the excavation and handling of materials:

- Apply water directly to the active excavation prior to soil disturbance. Additionally, water will be applied during the truck loading operations, as appropriate;
- Promptly apply water to excavation, loading or unloading operations upon any observance of dust;
- Control dust during operation of trucks by not allowing material to be dropped from heights above the top rail of the truck body;
- On days where wind speeds exceed 20 mph and dust is visible at a specific work area, cease work and call the SSO. Actions may include immediately securing or covering excavation areas and soils in a manner that does not generate fugitive lead dust;
- Regularly inspect all rear gate seals and locking mechanisms on material transport vehicles in order to prevent spillage and dust production;
- HEPA vacuum and/or wash the trucks prior to leaving the loading areas to prevent the deposition of material;
- Clean up all spilled soil material within the loading area and work areas.

5.3 Hazard Analysis

The hazard analyses are detailed in the Activity Hazard Analyses (AHAs) in Appendix B of this document.

6.0 EXTERIOR WORK - AIR/WORKPLACE SAMPLING AND MONITORING

6.1 Action Levels and Method of Determination

COCs and action levels are listed in Sections 4 and 5.

6.2 Air Sampling and Monitoring Plan

Air sampling and monitoring to ensure compliance with the project performance standards will be conducted. Air sampling and monitoring will be performed during soil remedial action and placement activities at residences and for tasks at the offsite soil stockpile area to ensure that there is no fugitive dust from the impacted soils or fill materials. Air sampling and monitoring details for activities at the offsite stockpile area are described in Section 13. Real-time particulate samplers and monitors will be utilized during the operations as detailed below.

6.2.1 Real-Time Particulate Monitors

On-site sampling and monitoring of dust levels is planned. Special considerations will be applied during earth moving operations (excavation, contaminated soil loading and unloading, and unloading of clean soil). Dust sampling and monitoring will be conducted with dust meters (i.e. Dust Trak model 8530 or model 8532 dust meters or equivalent) as a means of documenting concentrations of airborne dust. The parameter total particulate matter will be used to measure dust in the air. Dust readings will be recorded on Site specific dust sampling and monitoring forms or in the field logbook.

At each property being excavated, real-time dust sampling and monitoring will be performed for the duration of earthwork activities at each property, beginning with excavation and continuing through the completion of backfill and topsoil placement. For properties being excavated, one unit will be placed in a downwind location and one at the nearest entrance to the residence. For properties being backfilled, one unit will be placed at the nearest entrance to the residence.

Air samplers will be placed each day prior to soil disturbance or placement activities and reviewed relative to the area-specific action level on hourly intervals during the work. The total particulate action level will be 150 micrograms per cubic meter (ug/m³) in the downwind area. If the action level is exceeded, work will be decreased and the dust suppression techniques will be correspondingly increased as needed to lower the dust levels below the action level. Dust sampling will not be conducted during a significant rain event and dust meters will be protected in place in the event of a sudden shower. Dust meters can be encapsulated in plastic, if necessary, ensuring no obstructions to the flow of the meter.

6.2.2 Lead and Arsenic Air Samples

In addition to real time dust monitoring, air samples for arsenic and lead will be collected at two locations throughout excavation activities. The samples will be collected from the same downwind and home entrance locations used for the total particulate units. Each arsenic and lead air sample will be collected on a Gilian Filter Cassette (or similar). The air samples for the first two weeks of excavation will be analyzed by a laboratory and data compared to air action level criteria. If the filter results show that engineering controls are

working, then the subsequent air samples will be collected and stored and will only be analyzed if the total particulate results exceed the action level at a given property. No arsenic or lead air samples will be collected during backfill activities.

6.3 Noise Monitoring

Noise monitoring will not be performed for this project unless conditions warrant it.

6.4 Heat/Cold Stress Monitoring

Heat and cold stress monitoring will be implemented if necessary. The protocols provided by the American Conference of Governmental Industrial Hygienists (ACGIH) will serve as guidance for dealing with heat and/or cold stress (see Appendix D).

7.0 EXTERIOR WORK - PERSONNEL TRAINING

All personnel involved in field activities will be required to participate in a health and safety training program that complies with criteria set forth by OSHA in accordance with 29 CFR 1910.120(e).

Parsons and its subcontractors are individually responsible for training and maintaining records of their respective employees and for complying with all project requirements. Failure to comply could lead to disciplinary actions against Parsons employees and subcontractors or their employees. Further guidance is available in the Parsons Corporate Safety and Health Manual; ParShare link is as follows: [Corporate Safety and Health Manual](#).

Table 7-1 Competent Person and Activity Hazards Analysis Requirements

Safety and Health Requirement	Parsons Safety, Health, and Environmental Manual	OSHA Regulation	EM 385-1-1 Regulation	Competent/ Qualified Person	Training Required	Written Plan and AHA Required
General Safety and Health		1926.20	01.A	Yes	Yes	Yes
Safety Training		1926.21	01.B.01	Yes	Yes	Yes
Confined Spaces	15	1926.21, 1910.147	06.01	Yes	Yes	Yes
Confined Space Permit System	15	See above	06.01	Yes	Yes	Yes
First Aid and Medical	2	1926.23, 50	03.A	Yes	Yes	Yes
Fire Protection and Prevention	12	1926.24, 150-155, 352	09.A	Yes	Yes	Yes
Housekeeping	4	1926.25	14.C	N/A	N/A	N/A
Illumination	4	1926.26, 56	07.A	Recommended	N/A	N/A
Sanitation	4	1926.27, 51	02.A	N/A	N/A	N/A
Personal Protective Equipment	6	1926.28, 95-98, 100-107	05.A	Yes	Yes	Yes
Emergency Employee Action Plans	11	1926.35	01.E	Recommended	Yes	Yes
Noise Exposure	7	1926.52	05.C	Yes	Yes	Yes
Radiation Protection	9	1926.53, 54	06. E&F; 28.A.02	Yes	Yes	Yes
Gases, Vapors, Dusts and Mists	9	1926.1926.55		Yes	Yes	Yes
Ventilation	37	1926.57, 353		Recommended	Yes	Yes
Hazard Communication	10	1926.59	1.B.06	Yes	Yes	Yes
Hazardous Waste Operations and Emergency Response	13	1926.65 1910.120	28.A	Yes	Yes	Yes
Accident Prevention Signs and Tags	16	1926.200	08.A	N/A	N/A	N/A
Signaling	16	1926.201	08.B	Recommended	N/A	Yes
Barricades	16	1926.202		N/A	N/A	N/A
Material Storage	17	1926.250	14.B	N/A	Yes	Yes

Safety and Health Requirement	Parsons Safety, Health, and Environmental Manual	OSHA Regulation	EM 385-1-1 Regulation	Competent/ Qualified Person	Training Required	Written Plan and AHA Required
Rigging	26	1926.251	15.A	Yes	Yes	Yes
Waste Disposal		1926.252	14.D	Yes	Yes	Yes
Tools	29	1926.300-307	13.A	N/A	N/A	Yes
Gas Welding and Cutting	28	1926.350	10.A	Recommended	Yes	Yes
Arc Welding	28	1926.351	10.E	Recommended	Yes	Yes
Electrical	24	1926.400-415	11.E	Yes	Yes	Yes
General Electrical	24	1926.416	11.A	Yes	Yes	Yes
Lockout Tagout	23	1926.417, 1910.147	12.A	Yes	Yes	Yes
Lockout Tagout Permit System	23	See above	12.A	Yes	Yes	Yes
Maintenance of Electrical Equipment		1926.431	11A	Yes	Yes	Yes
Environmental Deterioration of Electrical Equipment	24	1926.432		Yes	Yes	Yes
Batteries/Battery Charging Equipment	24	1926.441	11.E	N/A	Yes	Yes
Scaffolding	20	1926.450-454	22.A	Yes	Yes	Yes
Aerial Lifts	21	1926.453	22.J and K	Yes	Yes	Yes
Fall Protection	22	1926.500-503	21.A	Yes	Yes	Yes
Cranes, Derricks, Hoists, Elevators and Conveyors	26	1926.550	16.A	Yes	Yes	Yes
Motor Vehicles, Mechanized Equipment	25	1926.600-603	18.A	Yes	Yes	Yes
Powered Industrial Trucks (forklifts)	25	1910.178		Yes	Yes	Yes
Site Clearing	32	1926.604	31.A	N/A	Yes	Yes
Marine Operations and Equipment		1926.606	16.F	Yes	Yes	Yes
Excavations	33	1926.650-652	25.A	Yes	Yes	Yes
Excavation Permit	33	N/A	N/A	Yes	Yes	Yes
Concrete and Masonry Construction	4	1926.700-706	27.A	Yes	Yes	Yes
Steel Erection	34	1926.750-761 and SENRAC		Yes	Yes	Yes
Underground Construction	30	1926.800	26.A	Yes	Yes	Yes
Caissons		1926.801	26.H	Yes	Yes	Yes
Cofferdams		1926.802		Yes	Yes	Yes
Compressed Air	30	1926.803	26.I	Yes	Yes	Yes

Safety and Health Requirement	Parsons Safety, Health, and Environmental Manual	OSHA Regulation	EM 385-1-1 Regulation	Competent/ Qualified Person	Training Required	Written Plan and AHA Required
Demolition	32	1926.850-860 inclusive	23.A	Yes	Yes	Yes
Power Transmission and Distribution		1926.950-960 inclusive	11.H	Yes	Yes	Yes
Rollover Protective Structures; Overhead Protection	25	1926.1000-1003 inclusive		N/A	N/A	Yes
Stairways and Ladders Scope	18	1926.1050	21.A	N/A	Yes	Yes
Stairway/Ladder General Requirements	18	1926.1051		Yes	Yes	Yes
Stairways	18	1926.1052	21.E	Recommended	Yes	N/A
Ladders	19	1926.1053	21.D	Yes	Yes	Yes
Ladder/Stair Training	19	1926.1060		Yes	Yes	Yes
Diving Scope		1926.1071-1072	30.A	Yes	Yes	Yes
Dive Team Quals		1926.1076	30.A.08	Yes	Yes	Yes
Dive Safe Practices Manual		1926.1080	30.A.16	Yes	Yes	Yes
Pre-dive Procedures		1926.1081		Yes	Yes	Yes
Procedures During Dive		1926.1082	30.A.15	Yes	Yes	Yes
Post Dive Procedures		1926.1083	30.A.22	Yes	Yes	Yes
SCUBA Diving		1926.1084	30.B	Yes	Yes	Yes
Surface-Supplied Air Diving		1926.1085	30.A.04	Yes	Yes	Yes
Mixed-gas Diving		1926.1086	30.D	Yes	Yes	Yes
Liveboating		1926.1087	30.A.05	Yes	Yes	Yes
Diving Equipment		1926.1090	30.E	Yes	Yes	Yes
Diving Recordkeeping Requirements		1926.1092	30.A.06	Yes	Yes	Yes
Internal Traffic Control	16	N/A	8.D	N/A	Yes	Yes
Traffic Movement Restriction Times	16	N/A	8.C	N/A	Yes	Yes
Line Breaking	23	1910.119 and 1926.54		Yes	Yes	Yes
Major Material Movements	17	N/A	N/A	N/A	Yes	Yes
Right-of-way Restrictions	16	N/A	N/A	N/A	Yes	Yes
Bicycles/Golf Carts		N/A	18.D	N/A	Yes	N/A
IIPP/SSPP		Cal 3203	Cal 3203	Yes	Yes	Yes

ParShare link: [Competent Person and Activity Hazards Analysis Requirements](#)